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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,257	10/31/2003	Le Trong Nguyen	SP015.C16	9218

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EXAMINER	
PAN, DANIEL H	

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,257	NGUYEN ET AL.	
	Examiner	Art Unit	
	Daniel Pan	2183	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- *If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.*
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ~~10/31/03,01/09/04~~ 05/23/04, 07/27/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 8-28 are presented for examination. Claims 1-7 have been canceled.

2. The references of IDS filed on 08.30.04, although already entered, have not been scanned, the examiner could not retrieve the copies in electronic form, no copies of the references were available at the time of examination, therefore, applicant is kindly suggested to supply backup copies with the 1449 form in the next response so it can be considered in time.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 8,9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 29 of U.S. Patent No. 6,647,485. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons :

4. Although the patented claim 8 did not specifically recite the feature of at least two and not more than maximum N available branch instructions as recited in current claim 8 (see current claim 8 , lines 34,14-17) as claimed, it would have been obvious to

one of ordinary skill in the art to use the maximum N branch instructions as claimed because the patented claim 29 also taught the issuing of instruction without regard of the program order (claim 29, lines 20-25), therefore, one of ordinary skill in the art should be able to recognize that concurrent conditional branches was applicable in a superscalar system in order to achieve the processing capacity of the out of sequential program order, and for the above reasons , provided a motivation, and as to the maximum number, it would have been the internal built-in limit of any system, otherwise, it would have caused a processing overflow, and would render a system in inoperative state. Therefore, it must have a maximum limit number.

5. As to claim 9, claim 9 recites the bypass control of the data routing paths which was already reflected into the patented claim 29. Claim 9 includes all limitation of claim 8, and is rejected for the same reasons as recited in paragraph # 3 above.

6. Claims 13,14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 35 of U.S. Patent No. 6,647,485. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons :

Although the patented claim 35 did not specifically recite the feature of at least two and not more than maximum N available branch instructions as recited in current claim 35 (see current claim 35 , lines 10-12) as claimed, it would have been obvious to one of ordinary skill in the art to use the maximum N branch instructions as claimed because the patented claim 35 also taught the issuing of instruction without regard of

the program order (claim 35, column 59, lines 21-26), and the reasons of obviousness has been given in paragraph # 3 above, therefore, it will not be repeated herein.

7. As to claim 14, claim 14 recites the bypass control of the data to any one or more plurality of functional units which was already reflected into the patented claim 35. Claim 14 includes all limitation of claim 13, and therefore, is rejected for the same reasons as recited in paragraph # 5 above.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 8-22,26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vegesna et al. (5,488,729) in view of Blaner (5,287,467).

9. As to claim 8, 13 ,18, Vegesna disclosed a superscalar processing system including at least :

a)a fetch circuit [IFETCH] for retrieving a plurality of instructions (see fig.19 [IFETCH], col.22, lines 25-38, col.23, lines 45-50, col.29, lines 6-13, col.30, lines 26-32);

b)an instruction buffer that buffers the plurality of instructions from fetch circuit(see fig.19 [DBUF], col.22, lines 25-38, col.23, lines 45-50, col.29, lines 6-13, col.30, lines 26-32);

c)plurality of functional units configured to execute instructions and generated result (see fig.18 [ALU][FAU][FMU]);

d)register file comprising at least temporary registers for storing execution results (see fig.18, [16][26], col.20, lines 34-67, col.21, lines 1-10, col.24, lines 10-20);

e) resource identifying circuit for concurrently identifying execution resources for the instruction buffered instructions, and made a group of 2 instructions (see col.6, lines 52-57,col.15, lines 11-23);

f) issue control circuit for issuing more than one instructions for execution (col.21, lines 31-44, see also col.22, lines 38-52);

a plurality of routing paths to transfer the result form a register file having a plurality of entries to a plurality of function units (see fig. 6 for the result data and register file) .

10. Vegesna did not specifically show his group of instructions were at least conditional branch instructions as claimed. However, Blaner disclosed a system for including a group of at least two branch instructions (See Col.14, lines 25-29). It would have been obvious to one of ordinary skill in the art to use Blaner in Vegesna for including the group of two branch instructions as claimed because the use of Blaner could provide the processing capability of Vegesna to adapt to the requirement of a greater number of out of order instructions at a given access assignment, such as a concurrent instruction fetch or issue , and it could be readily achieved by configuring

the branch instruction selection of blaner into Vegesna such that the specific number of branch instructions could be recognized by Vegesna, to provide the enhanced processing structure, and therefore an alternative approach to the system, and in doing so, provided a motivation.

11. As to claims 9,14,19, Vegesna also included a bypass path (see fig.6).

12. As to claims 10,15, 20, Vegesna also included sequential program order (see fig.1).

13. As to claims 11, 16, 21, Vegesna also included branch taken or not taken (see col.11, lines 2-15).

14. As to claims 12,17, 22, Vegesna also included a selection of instruction (branch target) based on a bias signal (taken or not taken, see col.11, lines 1-15).

15. As to claims 26-28, Vegesna also included dependencies of the instructions (see col.9, lines 60-67).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vegesna et al. (5,488,729) in view of Blaner (5,287,467) as applied to claims 8,13,18 above, and further in view of Stamm et al (5,317,720).

17. As to claims 23-25, neither Vegesna nor Blanar specifically show the retire of the instructions in program order. However, Stamm disclosed a system including retiring the instructions in their operation order (col.14, lines 16-29). It would have been obvious to one of ordinary skill in the art to use Stamm in Vegesna for including the retirement of the instructions in order as claimed because the use of Stamm could provide Vegesna the ability to keep the corresponding result of the executed instructions in a predetermined sequence, thereby reducing the possible hazardous result overwritten by different instruction, and it could be readily done by predefining the retirement parameters of Stamm's instructions (e.g. the specific reading and execution cycles) into Vegesna so the retirement of Stamm's instructions could be recognized by Vegesna in order to proved the enhanced capability of the instruction processing, and for the above reasons, provided a motivation.

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Hasbrouck et al. (3,718,912) is cited for the teaching of the specifying or identifying instruction resources (see col.1, lines 18-42).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696, or the new number 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712, or the new number 571 272 4162.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

21 Century Strategic Plan

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